

ABSTRACT

The present invention is related to a method for the manufacture of a nucleic acid molecule comprising the steps of

- a) providing a first at least partially double-stranded oligonucleotide which has a modification allowing the oligonucleotide to be coupled to a surface, whereby the oligonucleotide comprises a recognition site for a first type IIS restriction enzyme which cuts outside its recognition site, and which oligonucleotide comprises a single-stranded overhang,
- b) providing a second at least partially double-stranded oligonucleotide whereby the oligonucleotide comprises a recognition site or a part thereof or a sequence which is complementary thereto, for a second type IIS restriction enzyme which cuts outside its recognition site, and which second oligonucleotide comprises a single-stranded overhang,
- c) ligating the first and the second oligonucleotide via their overhangs generating a first ligation product,
- d) immobilising the first ligation product to the surface via the modification,
- e) cutting the immobilised ligation product with the first type IIS restriction enzyme thus releasing an elongated oligonucleotide having an overhang,
- f) combining the elongated oligonucleotide with a further at least partially double-stranded oligonucleotide which has a modification allowing the oligonucleotide to be coupled, to a surface, whereby the further oligonucleotide comprises a recognition site for a further type IIS restriction enzyme which cuts outside its recognition site and which oligonucleotide comprises a single-stranded overhang, and ligating the elongated second oligonucleotide and the further at least partially double-stranded oligonucleotide via their overhangs forming a further ligation product,

- g) immobilising the further ligation product to a surface via the modification,
- h) cutting the further ligation product with the further type IIS restriction enzyme releasing an elongated oligonucleotide having an overhang, and
- i) optionally, repeating steps f) to h).